UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R077XA014NM

Site Name: Loamy

Precipitation or Climate Zone: 15 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on level to gently undulating plains of the High Plains. Elevations range from 4,300 to 5,100 feet above sea level. Slopes range from 0 to 9 percent.

Land Form:

1. Plain
2.
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	4,300	5,100
Slope (percent)	0	9
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

The climate of this area can be classified as "semi-arid continental".

Precipitation averages from about 15 to 16 inches annually, with approximately 75 percent of this yearly moisture falling during the period of May through October. Most summer rainfall is associated with usually brief afternoon and evening thunderstorms, which occasionally produce heavy rain over a small area, and sometimes bring a little hail. Winters are generally dry, with only one or two days a month when as much as one-tenth inch of moisture falls. However, winters average 20 inches of snow, though most snowfalls are light with an occasional storm producing up to six inches. Following these storms, snow may lie on the ground for several days: and, occasionally moderate to strong winds accompanying these storms result in blizzard conditions and heavy drifting. Although the precipitation patterns favor the production of warm-season plants, sufficient moisture is received in the late winter and the spring to support cool-season plants. Approximately 25 percent of the annual precipitation is received during April and May. May is generally the wettest month followed by July and then August.

Temperatures show the seasonal changes and large annual and diurnal ranges, characteristic of such a climate. Summers are generally mild; high daily temperature readings exceed 90 degrees F about one third of the time, and readings of 100 degrees F occur about once a year. Rapid cooling after sundown results in minimum temperatures below 60 degrees F on most nights, even in mid summer. Winter shade temperatures usually rise to the mid 40's, and an average of only 15 days fail to see temperatures rise above the freezing mark. Winter nighttime temperatures fall below the freezing mark most of the time from early November through March; below zero readings occur on an average of only three times a year.

The freeze-free season ranges from 168 days to 171 days between April 28th to October 16th. Both temperatures and annual precipitation favor warm-season plants. About 40 percent of the annual precipitation is received during the season where temperatures will benefit cool-season plants, and only 10 percent falls during the dormant season.

While open to winter invasions of arctic air over the Great Plains, this area is far enough south and west to miss many of these outbreaks. Mountains to the north and west intercept much of the precipitation from the Pacific northwest storms coming through this area during the winter. An average hourly wind velocity for the year is 15 miles per hour. Somewhat higher winds prevail during the spring months, but velocities exceeding 24 mile per hour are experienced only 10 percent of the usual year. Stronger winds blow chiefly from a westerly or southwesterly direction during the spring. Relative humidity is moderately low.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	158	191
Freeze-free period (days):	177	220
Mean annual precipitation (inches):	15	16

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.28	.38	18.5	50.1
February	.32	.40	21.9	58.7
March	.64	.69	26.3	61.6
April	.89	1.35	34.2	70.9
May	2.08	2.56	43.6	79.3
June	1.82	2.07	52.5	88.4
July	2.60	2.93	57.5	91.7
August	1.68	2.97	56.1	89.5
September	1.55	1.90	49.3	82.8
October	1.10	1.32	38.0	79.2
November	.41	.60	26.8	59.9
December	.38	.50	20.1	51.3

Climate Stations:

				Period		
Station ID	290377	Location	Amistad 3 ESE, NM	From: 04/01/25	To:	12/31/01
Station ID	291887	Location	Clayton WSO Airport, NM	From: 2/1/1896	To:	12/31/01
Station ID	293878	Location	Hayden, NM	From: 01/01/14	To:	09/30/65
Station ID	295937	Location	Mosquero, NM	From: 12/01/15	To:	12/31/01
Station ID	297638	Location	Roy, NM	From: 01/01/14	To:	12/31/01

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

These soils are moderately deep to deep, well-drained soils. The surface layers are loams 8 to 12 inches over a loam or clay loam subsurface. These soils have moderate to moderately slow permeability. Runoff is medium. Available water-holding capacity is high. Effective rooting depth is 20 too more than 60 inches.

Parent Material Kind: Alluvium
Parent Material Origin: Mixed

Surface Texture:

1. Loam
2.
3.

Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: Loamy
Surface Fragments <=3" (% Cover): N/A
Surface Fragments >3" (% Cover): N/A

Subsurface Fragments <=3" (%Volume): 5 to 32
Subsurface Fragments >=3" (%Volume): 0 to 12

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Slow	Moderately slow
Depth (inches):	60	>72
Electrical Conductivity (mmhos/cm):	0.00	2.00
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	6.6	9.0
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	9	12
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
This site is a grassland dominated by warm-season short and mid-grasses with only an occasional shrub or half-shrub. Cool-season forbs and grasses make up an important minor component.

Canopy Cover:	
Trees	0
Shrubs and half shrubs	3 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	30 – 35
Bare ground	25 – 30
Surface gravel	0
Surface cobble and stone	0
Litter (percent)	25 – 30
Litter (average depth in cm.)	3

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	318	583	848
Forb	48	88	128
Tree/Shrub/Vine	24	44	64
Lichen			
Moss			
Microbiotic Crusts			
Total	600	1,100	1,600

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOGR2	Blue Grama	385 – 440	385 – 440
2	BUDA	Buffalograss	55 – 110	55 – 110
3	BOCU	Sideoats Grama	55 – 110	55 – 110
4	PAOB	Vine-mesquite	33 – 55	33 – 55
5	PASM	Western Wheatgrass	55 – 110	55 – 110
6	PLJA	Galleta	33 – 55	33 – 55
7	BOSA	Silver Bluestem	33 – 55	33 – 55
8	SPCR	Sand Dropseed	33 – 55	33 – 55
9	ELEL5	Bottlebrush Squirreltail	22 – 44	22 – 44
10	ARIST	Threeawn spp.	22 – 44	22 – 44
11	MUAR2	Sand Muhly	0 – 22	0 – 22
12	MUTO2	Ring Muhly	0 – 22	0 – 22
13	PAVI2	Switchgrass	0 – 33	0 – 33
14	2GRAM	Other Grasses	55 – 110	55 - 110

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
15	HELIA3 PSLA3 ZIAC	Sunflower Lemon Scurfpea Plains Zinnia (Desert)	33 – 55	33 – 55
16	2FP 2FA	Perennial Forbs Annual Forbs	33 – 55	33 - 55

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
17	ARFR4 SENEC GUSA2 2SD	Fringed Sagewort Groundsel Broom Snakeweed Other Shrubs	33 – 55	33 - 55

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other shrubs that could appear on this site include: winterfat, yucca, and gumweed. Other forbs include: dalea spp., prairie coneflower, sensitive briar, prairie clover, dotted gayfeather, wooly Indianwheat, and western ragweed.

Plant Growth Curves

Growth Curve ID **4906NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Warm-season short/mid-grassland with scattered shrubs and a minor component of cool-season forbs and grasses.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	10	10	25	30	12	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

No Data

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Berthoud	B
Carnero	C
Campus	B
Dean	B
Dioxice	B
Duma	B
Gruver	C
Tapia	B
Texline	B

Recreational Uses:

This site has limited recreation potential; limited mainly by lack of live water and shade. Hiking, camping and picnicking are poor to fair. Photography of wild flowers and wildlife is fair. Hunting for antelope is fair to good. The natural beauty is enhanced by the "wide open spaces" typical of the area.

Wood Products:

This site produces no commercial wood products.

Other Products:

Grazing:

This site can be used by all classes of livestock during any season of the year. Due to the occasional severe winter storms, emergency feed may be necessary. Yearling calves grazing from April to October may be favored because of these winter storms. Supplemental protein is needed if site is grazed during the winter. Continuous yearlong grazing or grazing continually during the period from April through October will result in a plant community dominated by blue grama and buffalograss. Continuous heavy grazing will cause blue grama to form low dense turf. Forage production is greatly reduced under these conditions. A system of deferred grazing, which varies the season of grazing and rest in a pasture during successive years, is needed to improve or maintain a healthy well-balanced plant community. Different seasons of rest will benefit different plants. Winter rest will benefit winterfat and fringed sagewort. Spring rest (April – June) will allow western wheatgrass to grow and reproduce. Summer rest will benefit warm-season species such as blue grama, sideoats grama, and vine-mesquite. Approximately 90 percent of the total yield is from species that furnish forage for grazing animals.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	**Ac/AUM**
100 - 76	2.2 – 4.0
75 – 51	2.7 – 5.1
50 – 26	40 – 8.8
25 – 0	8.8+

Plant Part	Code	Species Preference	Code
Stems	**S**	**None Selected**	**NS**
Leaves	**L**	**Preferred**	**P**
Flowers	**F**	**Desirable**	**D**
Fruits/Seeds	**F/S**	**Undesirable**	**U**
Entire Plant	**EP**	**Not Consumed**	**NC**
Underground Parts	**UP**	**Emergency**	**E**
		Toxic	**T**

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Vine-mesquite	Panicum obtusum	EP	D	D	D	D	D	D	D	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Silver Bluestem	Bothriochloa saccharoides	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Sunflower	Helianthus spp.	EP	U	U	U	U	U	D	D	D	U	U	U	U
Prairie Coneflower	Ratibida columnifera	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

Animal Kind: Livestock
Animal Type: Horses

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Vine-mesquite	Panicum obtusum	EP	D	D	D	D	D	D	D	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D

Animal Kind: Livestock
Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	D	D	D	D	D	D	D	D	D	D	D	D
Vine-mesquite	Panicum obtusum	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Western Wheatgrass	Pascopyrum smithii	EP	U	U	D	D	D	D	D	D	D	D	D	U
Sunflower	Helianthus spp.	EP	U	U	U	U	U	D	D	D	U	U	U	U

Animal Kind: Wildlife

Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sunflower	Helianthus spp.	EP	U	U	U	U	U	D	D	D	U	U	U	U
Lemon Scurfpea	Psoralidium lanceolatum	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Plains Zinnia	Zinnia acerosa	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **Colfax, Harding, Union**

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern High Plains 77 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys Union, Harding Colfax.

Characteristic Soils Are:	
Berthoud	Carnero
Texline	
Other Soils included are:	
Campus, Dean, Dioxice, Dumas, Gruver	Kim, Tapia

Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	05/23/84	Donald H. Fulton	06/13/84

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	06/05/01	George Chavez	12/18/02